

## Surge Protection Barrier

### M-LB-Ex-4242

- Surge protection for 2 signal lines
- Nominal voltage 24 V
- Surge protection barrier for non-grounded signal lines
- Max. surge current (8/20  $\mu$ s) 20 kA
- Uninterruptable operation (auto reset)
- Status indication
- Modular design, pluggable
- Up to SIL 3 acc. to IEC/EN 61508



# SIL 3



## Function

The device limits induced transients of different causes, e. g. lightning or switching operations. The limitation is achieved by diverting the current to earth and limiting the signal loop voltage during the duration of the overvoltage pulse.

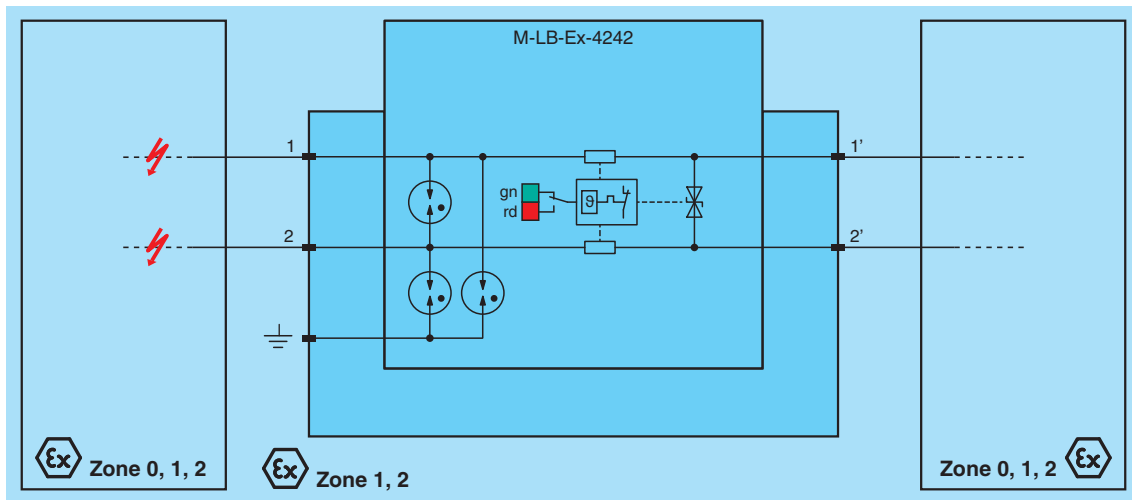
The device consists of base module and protection module. The protection module can be replaced without tools.

The device is HART transparent.

The device has a status indication at the front.

The device is mounted on a 35 mm DIN mounting rail according to EN 60715.

## Connection



## Technical Data

General specifications	
Number of protected signal lines	2
Topology	non-grounded
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Electrical specifications	
Connection	protected area: terminals 1', 2' unprotected area: terminals 1, 2
Leakage current	< 30 $\mu$ A bei $U_c$ , line-line < 10 nA bei $U_c$ , line-earth
Nominal voltage	24 V
Maximum continuous operating voltage	$U_c$ 25.4 V AC and 36 V DC

Release date: 2023-06-20 Date of issue: 2023-06-20 Filename: 70155082\_eng.pdf

## Technical Data

Nominal load current	$I_L$	0.5 A at 80 °C (176 °F)
Series resistance		1 $\Omega$ per line
Impulse discharge current (10/350 $\mu$ s)	$I_{imp}$	1.5 kA per line
Nominal discharge current (8/20 $\mu$ s)	$I_n$	5 kA per line
Max. surge current (8/20 $\mu$ s)	$I_{max}$	20 kA
Total discharge current (8/20 $\mu$ s)	$I_{total}$	10 kA
Voltage protection level	$U_p$	max. 65 V line-line for nominal discharge current $I_n$ max. 1100 V line-earth for nominal discharge current $I_n$
Impulse reset time		< 30 ms
Cut-off frequency	$f_G$	3.5 MHz , line-line
<b>Indicators/settings</b>		
Display elements		status display operating state (green) fault indication (red)
<b>Conformity</b>		
Degree of protection		IEC 60529:2013
Functional safety		IEC/EN 61508:2010
Surge protective devices for low voltage		EN 61643-21:2001+A1:2009+A2:2013 IEC 61643-21:2001+A1:2008+A2:2012
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 80 °C (-40 ... 176 °F) For usage in hazardous area observe the EU-type examination certificate.
Storage temperature		-40 ... 80 °C (-40 ... 176 °F)
Relative humidity		max. 95 % , without condensation
Corrosion resistance		acc. to ISA-S71.04, severity level G3
<b>Mechanical specifications</b>		
Degree of protection		IP20
Connection		spring terminals with push-in connection technology
Core cross section		0.2 ... 2.5 mm <sup>2</sup> one wire 0.2 ... 2.5 mm <sup>2</sup> fine-strand
Material		
Housing		Polyamide PA 6.6
Mass		approx. 35 g
Dimensions		6 x 90 x 69 mm (0.24 x 3.5 x 2.7 inch) (W x H x D)
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		TÜV 22 ATEX 8880 X
Marking		Ⓜ II (1)2G Ex ia [ia Ga] IIC T6...T4 Gb Ⓜ II 2G Ex ib IIC T6...T4 Gb Ⓜ II (1)D [Ex ia Da] IIIC
Temperature class		T6 for ambient temperature $\leq$ 50 °C T5 for ambient temperature $\leq$ 70 °C T4 for ambient temperature $\leq$ 80 °C
Voltage	$U_i$	30 V
Current	$I_i$	500 mA , restrictions see certificate
Power	$P_i$	5.32 W
Internal capacitance	$C_i$	negligible
Internal inductance	$L_i$	negligible
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN IEC 60079-7:2015+A1:2018 , EN 60079-11:2012
<b>International approvals</b>		
IECEx approval		
IECEx certificate		IECEx TUR 22.0050X
IECEx marking		Ex ia [ia Ga] IIC T6...T4 Gb Ex ib IIC T6...T4 Gb [Ex ia Da] IIIC
<b>General information</b>		

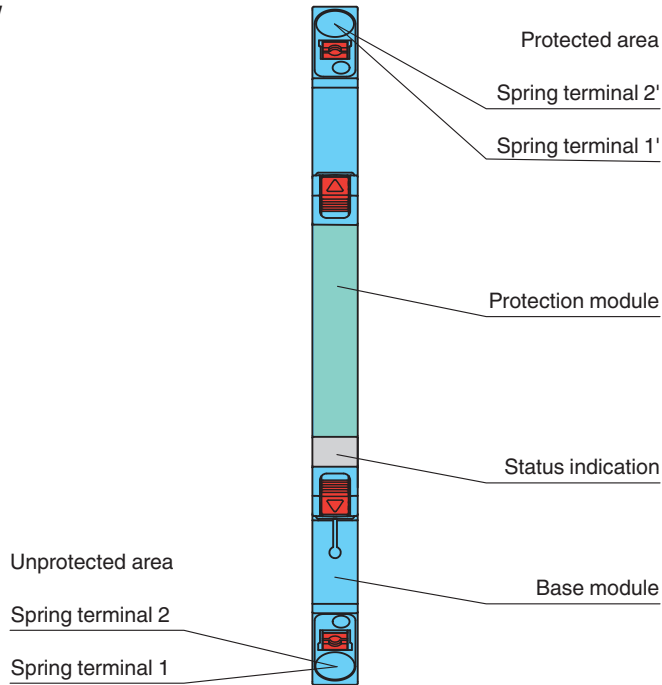
## Technical Data

Supplementary information

Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## Assembly

Front view



## Matching System Components

	<b>M-LB-4400</b>	Fault Status Module
---	------------------	---------------------

## Accessories

	<b>M-LB-4800</b>	Separation Wall
---	------------------	-----------------

Release date: 2023-06-20 Date of issue: 2023-06-20 Filename: 70155082\_eng.pdf